Amendments To The Claims

Original

1. A method of signal transmission comprising the steps of:

splitting a signal s_1 into signals $s_1(a)$ and $s_1(b)$, wherein signal s_1 comprises a first STS/OTD signal belonging to an STS/OTD pair;

phase sweeping the signal $s_1(b)$ using a first phase sweep frequency signal to produce a phase swept signal $s_1(b)$; and

adding the phase swept signal $s_1(b)$ to a signal s_2 to produce a summed signal s_3, wherein the signal s_2 comprises a second STS/OTD signal belonging to the STS/OTD pair.

Original

2. The method of claim 1, wherein the signal s_1 is split unevenly such that the signal $s_1(a)$ has an associated power level greater than a power level associated with the signal $s_1(b)$.

Currently amended

3. The method of claim 1 comprising the additional steps of:

amplifying the signal $s_1(a)$ to produce an amplified signal $s_1(a)$; and

amplifying the <u>summed</u> signal s_3 to produce an amplified signal s_3.

Original

4. The method of claim 3, wherein power levels associated with the amplified signal $s_1(a)$ and the amplified signal s_3 are approximately equal.

Original

5. The method of claim 3, wherein the signals $s_1(a)$ and s_3 are amplified an equal amount.

Original

6. The method of claim 1 comprising the additional steps of:

transmitting the signal $s_1(a)$ over a first antenna belonging to a pair of diversity antennas; and

transmitting the signal s_3 over a second antenna belonging to the pair of diversity antennas.

Original

7. The method of claim 1 comprising the additional steps of:

processing a signal S using space time spreading techniques to produce the signals s_1 and s_2.

Original

8. The method of claim 1, wherein the signal s_1 comprises a non-STS/OTD signal.

Original

9. The method of claim 1 comprising the additional steps of:

phase sweeping the signal $s_1(a)$ using a second phase sweep frequency signal to produce a phase swept signal $s_1(a)$ with a different phase from the phase swept signal $s_1(b)$.

Original

10. A method of signal transmission comprising the steps of:

splitting a signal s_1 into signals $s_1(a)$ and $s_1(b)$, wherein signal s_1 comprises a first STS/OTD signal belonging to an STS/OTD pair;

phase sweeping the signal $s_1(a)$ using a first phase sweep frequency signal to produce a phase swept signal $s_1(a)$; and

adding the signal $s_1(b)$ to a signal s_2 to produce a summed signal s_3, wherein the signal s_2 comprises a second STS/OTD signal belonging to the STS/OTD pair.

Original

11. The method of claim 10, wherein the signal s_1 is split unevenly such that the signal $s_1(a)$ has an associated power level greater than a power level associated with the signal $s_1(b)$.

Original

12. The method of claim 10 comprising the additional steps of:

amplifying the phase swept signal $s_1(a)$ to produce an amplified phase swept signal $s_1(a)$; and

amplifying the signal s_3 to produce an amplified signal s_3.

Original

13. The method of claim 12, wherein power levels associated with the amplified phase swept signal $s_1(a)$ and the amplified signal s_3 are approximately equal.

Original

14. The method of claim 12, wherein the phase swept signal $s_1(a)$ and the signal s_3 are amplified an equal amount.

Original

15. The method of claim 10 comprising the additional steps of:

transmitting the phase swept signal $s_1(a)$ over a first antenna belonging to a pair of diversity antennas; and

transmitting the signal s_3 over a second antenna belonging to the pair of diversity antennas.

Original

16. The method of claim 10 comprising the additional steps of:

processing a signal S using space time spreading techniques to produce the signals s_1 and s_2.

Original

17. The method of claim 10, wherein the signal s_1 comprises a non-STS/OTD signal.

Original

18. The method of claim 10 comprising the additional steps of:

phase sweeping the signal $s_1(b)$ using a second phase sweep frequency signal to produce a phase swept signal $s_1(b)$ with a different phase from the phase swept signal $s_1(a)$.

Original

19. A base station comprising:

a splitter for splitting a signal s_1 into signals $s_1(a)$ and $s_1(b)$, wherein signal s_1 comprises a first STS/OTD signal belonging to an STSOTD pair;

a multiplier for phase sweeping the signal $s_1(b)$ using a first phase sweep frequency signal to produce a phase swept signal $s_1(b)$; and

an adder for adding the phase swept signal $s_1(b)$ to a signal s_2 to produce a summed signal s_3, wherein the signal s_2 comprises a second STS/OTD signal belonging to the STS/OTD pair.

Original

20. The base station of claim 19, wherein the splitter unevenly splits the signal s_1 such that the signal $s_1(a)$ has an associated power level greater than a power level associated with the signal $s_1(b)$.

Original

21. The base station of claim 19 further comprising:

a first amplifier for amplifying the signal $s_1(a)$ to produce an amplified signal $s_1(a)$; and

a second amplifier for amplifying the signal s_3 to produce an amplified signal s_3.

Original

22. The base station of claim 21, wherein the first and second amplifiers amplify the signals $s_1(a)$ and s_3 such that power levels associated with the amplified signals $s_1(a)$ and s_3 are approximately equal.

Original

23. The base station of claim 21, wherein the first and second amplifiers amplify the signals $s_1(a)$ and s_3 an equal amount.

Original

24. The base station of claim 19 further comprising:

a pair of diversity antennas having a first and a second antenna;

a first transmitter for transmitting the signal $s_1(a)$ over the first antenna; and

a second transmitter for transmitting the signal s_3 over the second antenna.

Original

25. The base station of claim 19 further comprising:

a processor for processing a signal S using STS/OTD techniques to produce the signals s_1 and s_2.

Original

26. The base station of claim 19, wherein the signal s_1 comprises a non-STS/OTD signal.

Original

27. The base station of claim 19 further comprising:

a multiplier for phase sweeping the signal $s_1(a)$ using a second phase sweep frequency signal to produce a phase swept signal $s_1(a)$ with a different phase from the phase swept signal $s_1(b)$.

Original

28. A base station comprising:

a splitter for splitting a signal s_1 into signals $s_1(a)$ and $s_1(b)$, wherein signal s_1 comprises a first STS/OTD signal belonging to an STS/OTD pair;

a multiplier for phase sweeping the signal $s_1(a)$ using a first phase sweep frequency signal to produce a phase swept signal $s_1(a)$; and

an adder for adding the signal $s_1(b)$ to a signal s_2 to produce a summed signal s_3, wherein the signal s_2 comprises a second STS/OTD signal belonging to the STS/OTD pair.

Original

29. The base station of claim 28, wherein the splitter unevenly splits the signal s_1 such that the signal $s_1(a)$ has an associated power level greater than a power level associated with the signal $s_1(b)$.

Original

30. The base station of claim 28 further comprising:

a first amplifier for amplifying the phase swept signal $s_1(a)$ to produce an amplified phase swept signal $s_1(a)$; and

a second amplifier for amplifying the signal s_3 to produce an amplified signal s_3.

Original

31. The base station of claim 30, wherein the first and second amplifiers amplify the signals $s_1(a)$ and s_3 such that power levels associated with the amplified phase swept signal $s_1(a)$ and amplified signal s_3 are approximately equal.

Original

32. The base station of claim 30, wherein the first and second amplifiers amplify the signals $s_1(a)$ and s_3 an equal amount.

Original

33. The base station of claim 28 further comprising:

a pair of diversity antennas having a first and a second antenna;

a first transmitter for transmitting the phase swept signal $s_1(a)$ over the first antenna; and

a second transmitter for transmitting the signal s_3 over the second antenna.

Original

34. The base station of claim 28 further comprising:

a processor for processing a signal S using space time spreading techniques to produce the signals s_1 and s_2.

Original

35. The base station of claim 28, wherein the signal s_1 comprises a non-STS/OTD signal.

Original

36. The base station of claim 28 further comprising:

a multiplier for phase sweeping the signal $s_1(b)$ using a second phase sweep frequency signal to produce a phase swept signal $s_1(b)$ with a different phase from the phase swept signal $s_1(a)$.